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# **Experiences of delayed maturation in female vocational ballet students: An interpretative phenomenological analysis**

## **Abstract**

**Introduction:** There is a well-established bias toward late maturing females in the context of ballet, with up to 70% of professionals delayed in maturation. The timing of maturation has implications for physical and psychological outcomes which are likely to be amplified in dance. The aim of this research was to explore the role of maturity timing in adolescent dance students' experiences of vocational ballet training. **Methods:** Semi-structured interviews were carried out with 28 adolescent female dancers of differing maturity timing across three vocational ballet schools in the UK. Interpretative phenomenological analysis was employed in the analysis of data. This study comprises findings from the nine late maturing dancers within the sample. **Results:** Late maturing dancers perceived a number of aesthetic and functional advantages. The aesthetic advantages noted by the dancers are congruent with the well-established bias toward a later maturing physique for ballet; being 'small' and not having 'bits' is advantageous for these dancers in terms of maintaining a more pre-pubescent look and thereby conforming more easily to the expectations of the ballet world. However, dancers in this study perceived some significant drawbacks. Despite aesthetic advantages, later maturing dancers were disadvantaged by the current training system which sees them undertaking the most crucial training period during their most rapid period of growth. **Conclusions:** Greater consideration of maturation is needed within training systems and further research is warranted to understand these experiences in more depth and their implications for the physical and psychological wellbeing of young people in dance.

**Keywords:** *delayed puberty, maturation, wellbeing, ballet, qualitative*

*Word count: 5248*

## **Introduction**

Dance is a visual art and as such there is a focus on the aesthetic, size and shape of the body. With few exceptions, the ballet world has historically prescribed to a particular body; sylphlike bodies which can effortlessly portray the characters of the classic romantic ballets (Johnson, 2018). Change in this aesthetic has been seen over time, in tandem with wider cultural ideals and attitudes pertaining to the attractiveness of the female body (Pickard, 2015; Ritenburg, 2010; Saltzberg & Chrisler, 1995). The social world of ballet is based on a uniformity of body shape and size, with a growing preference amongst ballet audiences for ephemeral, 'other-worldly' bodies which are hyper-flexible and often skeletal (Foster, 2003; Johnson, 2018; Pickard, 2012, 2013; Pickard, 2015; Ritenburg, 2010; Wainwright, 2004). Puberty is a key process that young dancers have to negotiate and which may influence their pathway in dance (Mitchell, Haase, Malina, & Cumming, 2016). More specifically, the timing of maturational events (such as menarche) have been shown to influence behaviour (e.g. engagement in physical activity), physical (e.g. adult proportions) and psychological factors (e.g. eating pathology). Age at pubertal onset (timing) and rate of progress through puberty (tempo) vary considerably among individuals, with variation of up to five years between biological and chronological age (Bacil, Júnior, Rech, Legnani, & de Campos, 2015; Gluckman & Hanson, 2006; Malina, Bouchard, & Bar-Or, 2004; Rowe, 2002). Current research suggests 12.4 to 12.8 years to be the average age of menarche in the general population (Baker, Thornton, Bulik, Kendler & Lichtenstein, 2012; Malina et al., 2004). Comparatively, in ballet dancers the mean age of menarche has been reported as 13.1 years (Burckhardt, Wynn, Krieg, Bagutti, & Faouzi, 2011; Hamilton, Hamilton, Warren, Keller, & Molnar, 1997). Late maturation is defined by reaching key maturational events a year or more in delay of the average for a particular cohort, therefore young dancers who experience menarche age 14.1 years and later, would be classified as delayed in their maturation (Malina

et al., 2004; McDowell, Brody, & Hughes, 2007). Limbs grow during childhood and thus a greater period of time growing in childhood results in these individuals developing longer limbs relative to a shorter torso. Late maturing individuals experience smaller pubertal gains in height, weight, and fat mass, greater gains in relative lean mass and subsequently possess a more linear physique (Gay, Monsma, Smith, DeFreese, & Torres-McGehee, 2014).

Within the social context of ballet, characteristics associated with later maturation hold significant social value. Brooks-Gunn and Warren (1985) describe a ‘goodness of fit’ between the demands of the social context and the attributes of the late maturing dancer.

Although dated, existing literature suggests that up to 70% of women in the ballet profession are delayed in maturation (Hamilton, Brooks-Gunn, Warren, & Hamilton, 1988; Hamilton, Brooks-Gunn, & Warren, 1985).

In addition to aesthetic benefits, later maturation in female ballet dancers has been associated with greater psychological wellbeing, while earlier maturing female dancers report greater incidences of disordered eating, negative body image and higher psychopathology (Brooks-Gunn, Attie, Burrow, Rosso, & Warren, 1989; Brooks-Gunn & Warren, 1985). Moreover, early menarche and greater breast development have been associated with dropout from pre-professional ballet training (Hamilton et al., 1997).

More recently, qualitative research exploring the views of ballet teachers found that they perceived late maturing girls more positively in terms of their physical characteristics and potential for a career in ballet (Mitchell et al., 2016). Similar findings have been noted among high school female artistic gymnasts (Cumming, Eisenmann, Smoll, Smith, & Malina, 2005). Girls who were taller, heavier and carrying greater weight-for-height perceived their coaches as less likely to engage in positive coaching behaviours such as reinforcement, encouragement and instruction and as more likely to engage in negative coaching behaviours such as punitive technical instruction (i.e. Technical-instruction given in a punitive or hostile

manner following a mistake) and punishment (i.e. A negative reaction, verbal or non-verbal, following a mistake) (Cumming et al., 2005).

While research with ballet teachers suggests that they tended to perceive late maturing bodies more preferentially, teacher comments diverged from the general consensus that ballet favours girls who are later in maturation and suggested potential limitations of later maturation which have not been systematically explored in the literature (Mitchell et al., 2016). Teacher comments emphasised that late maturation in itself was not necessarily an advantage in ballet as the period of most rapid growth may then coincide with increases in training load and intensity.

The aim of this study was to explore the experience of late maturing female dancers in the context of vocational ballet training in the United Kingdom. Interpretative phenomenological analysis is employed to explore their experiences of maturation and development in the context of vocational ballet training.

## **Methodology**

### ***Design***

The study applies a qualitative design utilising semi-structured interviews and interpretative phenomenological analysis (IPA) (Smith & Osborn, 2003). IPA is concerned with the detailed examination of personal lived experience, the meaning of experience to participants and how participants make sense of that experience (Smith, 2011). The focus of this method is based around phenomenology, with the aim to develop an understanding of the meaning of human experience and how individuals make sense of their personal and social world (Larkin, Watts & Clifton, 2006). The process is heavily interpretative and dynamic, with the researcher playing an active role (Smith, Flowers & Larkin, 2009). IPA is described as particularly suitable when the researcher is interested in complexity or process or when an issue is personal (Smith, 1995), thus IPA was used because experiences of late maturation in the context of vocational ballet training are highly complex and personal. Semi-structured interviews have been employed to obtain rich experiential accounts from young dancers about their experiences of maturing and developing within an elite ballet training context.

### ***Setting***

Training in ballet can take place at many levels though there are two broad categories: recreational and vocational (also known as full-time or pre-professional) (Mitchell et al., 2016). This study focusses on vocational training. Vocational or full-time training pertains to a more serious involvement with dance whereby those who participate at this level undertake highly specialised, intensive training designed to prepare them for a professional career in the dance industry (CDET, 2011; Mitchell et al., 2016). In vocational ballet training, full-time commitment can begin as early as ten years of age, with children selected at this age studying dance alongside their basic schooling (Buckroyd, 2000; Pickard, 2015).

### ***Participants***

Three UK vocational ballet schools were recruited. In each school, female students age 11 – 17 (n=188), were invited to take part in a short questionnaire called the pubertal development scale (Carskadon & Acebo, 1993; Petersen, Crockett, Richards, & Boxer, 1988). Eight to ten students from each school were then selected to take part in an interview on the basis of differing maturation characteristics. The overall sampling aim between the schools was to achieve a minimum of eight interviews with individuals in each maturity group. A sample size of 28 interviews was achieved (early n=10, average n=9, late n=9). Table 1 shows participant characteristics of those in the late maturation group, all participants in the sample were Caucasian. This paper will discuss findings from the nine late maturing female dancers in this sample.

<Insert Table 1 here>

### ***Procedure***

All procedures were approved by the University of Bath Research Ethics Approval Committee for Health (Guillemin & Gillam, 2004). Prior to interviews taking place, consent was obtained and information given to each participant. The researcher was present to answer any questions. If an individual was identified as at risk, the policies and procedures outlined were followed. The data collection process followed two main steps a.) Conduct screening survey, b.) Conduct interviews based on results of the screening.

The pubertal development scale (PDS) is a self-report instrument designed for adolescent samples to report on the development of five indices of pubertal growth: (1) growth, (2) body hair, (3) skin changes, (4) changes to the voice and (5) growth of facial hair for males, and breast development and age of menarche for females (Bond et al., 2006; Petersen et al., 1988). Individuals can respond on a four-point scale from ‘not yet started’ to ‘seems

complete', providing a category score for that individual. If menarche has started, there is a further question for the year and month of first menstruation and age at onset. A modified version of the PDS was used in this study. In addition to the core questions this version asks the respondent to rate whether they feel their pubertal timing is early, on time, or late with respect to peers, offering a self-perceived categorisation of an individual's timing (Cance, Ennett, Morgan-Lopez, & Foshee, 2012). In terms of reliability the PDS has been reported to have internal consistency ranging from .68 to .83 across a longitudinal study (Petersen et al., 1988). Validity for the PDS when compared to measurement by physical exam has been reported between .61 and .67 (Brooks-Gunn, Warren, Rosso, & Gargiulo, 1987).

Prior to starting interviews, pilot interviews were conducted with three aspiring adolescent ballet dancers, which highlighted the need to include 'ice breaker' questions during subsequent interviews (Gibson, 2007). Each interview consisted of a 'warm up' section, to build rapport with the participant (Jacka, 2016; Smith & Eatough, 2016) with ice-breaker questions such as 'How long have you been dancing?', 'How did you get into dancing?' and 'What do you like most about ballet?' Before beginning the interview, participants could ask any questions they had about the research, and terms such as 'maturation' were defined in the same way each time (i.e. maturation was described as the process of growing and developing to become an adult). See Supplementary Table 1 for interview guide.

Semi-structured interviews were conducted in person in a private setting on each school premises. The mean duration of all the interviews was 42 minutes (with a range from 30 to 60 minutes) (Shaw, 2010). At the conclusion of each interview, reflective notes were recorded and referred back to during the analysis process.

### ***Data Analysis***

Data analysis followed Smith and Osborn's (2003) guidelines for Interpretative Phenomenological Analysis (IPA). Interviews were transcribed verbatim, with transcription



undertaken by an external company due to the timeframe of the study. Audio recordings were securely shared with the transcriber, a non-disclosure agreement was completed and guidelines were provided by the researcher regarding transcription style and layout. For anonymity, the name of each participant and any identifying information was removed from the interview transcripts; each was coded LM (late maturation) with a unique number e.g. LM1.

Following an IPA approach, the analysis was divided into three phases: (1) summarising participant described experiences, (2) evaluating their meaning, and (3) evaluating the self-reflections of each individual to explore what they make of their own experiences (Lyons & Coyle, 2007). The interpretative process coupled with the identification of themes comprised the final stage of analysis, a narrative account of the interplay between interpretations of the researcher and each participant's experiences in their own words (Smith, Flowers, & Larkin, 2009). The stages form an audit trail illustrating how interpretations were data based. Data have been analysed within maturity groups, once all cases for a particular group were analysed and allocated final themes, comparisons between cases across the group were made (Smith et al., 2009).

A 'critical friends' process was utilised to encourage reflexivity (Cowan & Taylor, 2016).

The process involved a critical dialogue with two senior researchers (SC, AH) who listened and offered critical feedback in relation to the interpretations of the researcher (Smith & McGannon, 2018).

## **Findings**

Three themes with interrelated sub-themes were derived as central to the experiences of late maturing female students at the three different vocational ballet schools: Experiencing the advantages of late maturation; feeling left behind; and seeking reassurance and support.

These themes illustrate the overarching conflict between pubertal development and

vocational ballet training; where female dance students experienced the advantages of late maturation initially and subsequently, the associated pitfalls which appear to stem from a clash between the timing of puberty and the trajectory of vocational dance training.

### **Experiencing the advantages of late maturation**

Late maturing female dance students perceived a number of benefits associated with delayed maturation, including not having to deal with the ‘inconvenience’ of puberty, aesthetic benefits, fitting in and feeling prepared for pubertal changes.

#### ***Inconvenience of puberty***

Participants perceived a marked advantage in not having to “...deal with that inconvenience [of puberty] yet” (LM16, age 13). They observed their peers who were already undergoing pubertal changes and felt pleased that they did not have to deal with these challenges yet: “I’m quite happy that I’ve not really grown up yet.” (LM17, age 13) and ““I like it because everybody moans about it. I just feel so happy because mine’s not started yet.” (LM12, age 13). Notably, dancers related this inconvenience to pubertal events such as menarche - being on your period when attending a ballet class - and experiencing visible changes such as breast development.

#### ***Aesthetic benefits***

Late maturing female dance students also experienced aesthetic benefits relating to delayed onset of puberty. They noticed how others may struggle due to changes in weight and shape and associated this with ‘developing too quickly’ or being ‘overdeveloped’:

You see a lot of people going to auditions being turned down for their body shape, in terms of they are overdeveloped for their age, and that kind of thing. I have got friends that that has happened to. They have not got in, with the reason being that they have developed too quickly.

LM14, age 14

They observed that there were advantages to looking mature for ballet but suggested that the extent of physical development is key: “For ballet, it's good to look older but you don't want bits, you know what I mean.” (LM11, age 14).

### ***Fitting in***

Another benefit of later maturation was the feeling of ‘fitting in’ and being in synchrony with many of their peers where:

...it would be harder [in a non-dance school] then because no one really dances as well so I think development is, sort of, set back a bit through dancing so everyone would be like really developed and I'd just stand out loads whereas with here I feel like it doesn't matter because everyone knows that that's what happens and I definitely feel more accepted here.

LM19, age 14

### ***Feeling prepared***

Participants described benefitting from the experiences of their peers who had already gone through puberty and felt that this enabled them to feel more prepared and able to deal with it “...being around all my friends and things and they've been going through these changes.... I think, from watching them, and how they deal with it, I think I'll be able to deal with it“ (LM16, age 13). Late maturing dance students also described advantages of getting advice and support from peers “I think it prepared me in a way to be honest, I got more advice on how to deal with it and you went along with it. I think it's a good thing when you obviously hear everyone else's experiences.” (LM13, age 15).

### ***Feeling left behind***

While some of the outcomes associated with later maturation enabled these dancers to perceive benefits, this delay in maturation also led to dancers feeling left behind both in terms of their

training and psychosocial factors. Participants highlighted implications of physical injury and needing to 'catch up', anxiety over the 'unknown outcomes' of puberty, feelings of social embarrassment or exclusion and described an asynchrony between physical and psychological maturity.

### ***Implications of physical injury: needing to catch up***

Late maturing dance students perceived distinct disadvantages to their functional and physical capabilities and subsequently to their training. As their earlier maturing counterparts had gone through puberty and completed their most rapid period of growth, late maturing dance students were just beginning to experience this, meaning that as their peers experienced gains in flexibility and adjusted to physical changes, later maturing dancers were losing their flexibility and experiencing these physical changes and associated difficulties with balance, co-ordination and so on. "...everybody else has already grown and they have gotten really flexible, and I'm just starting to lose my flexibility" (LM14, age 14). Needing to 'catch up' was a source of anxiety for many of the late maturing dancers and for some, the need to 'catch up' was significant, meaning the continuation of training and the delaying of auditioning for a further year.

This period of rapid growth can also be associated with injury, with later maturing dancers experiencing these types of injury at a later, arguably more crucial, stage in their training. "I've grown a lot and I'm nowhere near as flexible as people in my year. I've got loads of injuries due to growth" (LM11, age 14). Loss of highly prized attributes, such as flexibility, at this stage in training were described as closely linked with confidence for later maturing dancers:

...you will be in class and everybody's legs will be at their ears, and you can't get past 90 degrees...And even though you know that you are growing, and that this is what is going to happen, it still definitely puts your confidence down. Because you are looking at everybody else and thinking, "Why can't I do that? I should be able to do that kind of thing."

LM14, age 14

***Unknown outcomes***

Late maturing dance students described anxiety surrounding the unknown outcomes of puberty; these dancers finding out, at a very late point in their training, whether or not their adult bodies will conform to the requirements of professional ballet. “If you grow the wrong way then you just won't make it as a ballerina so it really depends on how you grow” (LM18, age 14). It was accepted by the majority of these dancers that these outcomes were somewhat ‘make or break’ and that they would have to ‘come to reality’ in terms of the potential for a career in ballet, should changes at puberty not be conducive to ‘the right shape for ballet’:

...I'm so focused on becoming a ballet dancer, that's all I want to do. Obviously, later these changes that I don't know if I'll end up getting big developed or if it's not the right shape for ballet, then that would affect it. I'd still be really focused and I'd have to come to reality

LM12, age 13

There was a clear understanding that the extent of development is crucial: “...you don't want to grow too much or you don't want to get really tall, or you don't want to have breast development, and stuff, too much” (LM12, age 13).

***Feelings of social embarrassment or exclusion***

Late maturing dance students described feelings of social exclusion; lacking the experience to relate to their peers' narratives on puberty: “...everyone else seemed to be more developed and like they could talk, you know, they would talk about it and stuff and I would just be like “I have no idea because it has not happened to me yet”” (LM15, age 17). Lack of development was also described as ‘embarrassing’. Just as early maturing dancers struggled to hide their development, late maturing dancers felt unable to conceal their lack of development: “Socially, it's embarrassing, because people notice it” (LM11, age 14).

***Asynchrony between physical and mental feelings of maturity***

Participants experienced asynchrony between their mental and physical feelings of maturity. These girls felt that their physically immature appearance restricted their access to peer narratives around puberty. Additionally, they felt that this had implications for how others perceived them and interacted with them: “It [puberty] would make you feel more mature, and like more grown up, which obviously is a good thing at this age...I guess it just makes you feel a bit more, like people take you more seriously, if you know what I mean?” (LM15, age 17). Furthermore, late maturing dancers felt that these factors inhibited feeling like a teenager:

...you still feel like a child. When other people talk about stuff you don't really understand because you don't have any experience. It's embarrassing...it just is because it makes me feel like I'm not a teenager

LM18, age 14

### **Seeking reassurance and support**

Finally, an important theme for late maturing dance students was seeking reassurance and support. This included being able to seek support and reassurance from both peers and teachers and teacher awareness and understanding.

#### ***Advice and reassurance from peers***

A benefit of delayed maturation relative to some of their peers and something which later maturing dancers highlighted as important to them was being able to seek support and advice from peers “...all my friends are really supportive of you, you can talk to them because they’ve been through it all.” (LM12, age 13). This was described as something which these dancers felt made it easier compared to earlier maturation; the benefit of learning from peer experiences “I think later it’s easier to work with I think...Probably because you know what all your friends are doing and how they are coping with it and then it’s more advice to be honest.” (LM13, age 15).

#### ***Teacher awareness and understanding***

The awareness and understanding of teachers was also a key theme in terms of providing reassurance for later maturing dance students, particularly in terms of physical and functional changes. For example, demonstrating understanding when dancers lose their flexibility and recognising that this is not the dancer being lazy but a result of growth. This helped later maturing dancers to feel less anxious about these changes:

Like, if you start to lose your flexibility or whatever, then teachers recognise that that's why. You're not just stopping; you are...You are growing, and that kind of thing. Especially here, the teachers are really supportive and they understand. If you are struggling with something, then they will help you

LM14, age 14

Overall, late maturing dance students experienced both benefits and challenges in relation to their pubertal timing. A sense of the conflict between an initial 'goodness of fit' and subsequent asynchrony between developmental stage and training stage/demand is apparent within their lived experiences.

## **Discussion**

There is a well-established bias toward late maturing females in the context of ballet, with some studies reporting up to 70% of professionals with delayed maturation (Hamilton et al., 1988; Hamilton et al., 1985). In line with this observation, late maturing ballet students in vocational training perceived a number of aesthetic, functional and developmental advantages. However, experiences of later maturation were coupled with feelings of conflict for ballet students, who felt left behind in the final years of their training and who needed to seek reassurance and support in order to negotiate pubertal change.

The aesthetic advantages noted by the dance students in this study are congruent with the well-established bias toward a later maturing physique for ballet; being ‘small’ and not having ‘bits’ is advantageous for these dancers in terms of maintaining a more pre-pubescent look, and thereby conforming more easily to the expectations of the ballet world (Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1985; Pickard, 2013; Pickard, 2015). While physical change may be a direct effect of puberty, the indirect social value of these physical attributes is of great significance. Brooks-Gunn and Warren (1985) described a ‘goodness of fit’ between the requirements of the social context of ballet and the physical and behavioural characteristics of the later maturing female dancer. These findings may have particular relevance in relation to gender theory and future research should consider utilising this perspective in order to further inform our understanding of maturation in the dance context.

In addition to aesthetic benefits, late maturing dance students perceived more practical benefits associated with the inconveniences of experiencing puberty within a dance environment, such as the self-consciousness associated with menstruation, feeling bloated and breast development when only wearing a leotard and tights. From this perspective, late maturing dancers described feeling ‘lucky’ and ‘happy’ that they did not yet have to deal with this.



While late maturation is initially associated with aesthetic advantages, dance students described a conflict between the delayed timing of maturation and the realisation of adult physical proportions. Delayed timing of maturation in turn delayed realisation of adult physique, which would determine whether or not a ballet career would be possible. Consequently, late maturing dancers felt anxiety over the unknown outcomes regarding their physical development.

The extent of development was the main concern for these dancers who, as a whole, were keen to look more mature, but were also very aware that the extent of physical development would be critical to ensuring a future in ballet. This concern was founded by their experiences of peers being rejected at auditions or assessed out of training due to being perceived as ‘overdeveloped’. The extent of breast development was an aspect many of the dancers focused on, particularly in terms of the extent of development. Breast development was perceived as a particularly negative aspect of puberty in relation to having a career in ballet. This aligns with existing research which reported that dancers with greater breast development were more likely to dropout or be assessed out of training (Hamilton et al., 1997; Mitchell et al., 2016).

The direct effects of loss of flexibility and co-ordination were particularly salient for late maturing dance students due to the timing of physical change relative to testing and evaluation points in vocational ballet training. Despite their morphological advantages, later maturing girls appear disadvantaged by the current training system, which sees them undertaking the most crucial training period during their most rapid period of growth; with subsequent injury or adjustment to growth leading to feelings of being left behind and needing to catch up. Some evidence suggests an association between later maturation and injury incidence during later training years in ballet (Bradshaw & Karin, 2016). Furthermore, data on training load in ballet and gymnastics shows a significantly higher training load at the time late maturing girls reach puberty, exposing late developers to greater physical impact during growth and thus,

potentially to greater injury risk (BritishGymnastics, 2006; Caine et al., 2016; Ekegren, Quested, & Brodrick, 2014; Kadel, Donaldson-Fletcher, Gerberg, & Micheli, 2005).

Late maturing dance students described how growth and injury set them back at a crucial stage in their training. Research supports a greater potential for injury risk in late maturing females, where the incidence of fractures has been reported to rise with increasing age at menarche (Warren, Gunn, Hamilton, Warren, & Hamilton, 1986). Delayed growth and maturation leads to a prolongation of the vulnerable growing years, exposing the growth plates to the influence of adverse mechanical factors such as pressure, impact and microtrauma for a longer period (Horobeanu, Jones, & Johnson, 2017; Tanchev, Dzherov, Parushev, Dikov, & Todorov, 2000). Another factor which led to dancers feeling left behind was the loss of flexibility associated with the growth spurt. Loss of flexibility was closely connected to feelings of low confidence which were accentuated by peer comparison. Dancers described how they lacked confidence due to losing prized attributes, such as flexibility and co-ordination, just as some of their peers were excelling in these areas. Loss of confidence, in addition to the relatively minimal time these individuals have to adjust and adapt to these changes before the end of their pre-professional training, may leave them vulnerable in terms of their psychosocial wellbeing.

Late maturing dance students also described facing a number of other psychosocial challenges. Dancers described the social issues they perceived as a result of being late to develop. While some of the dancers noted a feeling of ‘fitting in’ related to being in synch with many of their peers, for those who were very delayed in their maturation, this advantage was perceived as detrimental, particularly in terms of social interactions.

Late maturing dance students described feeling ‘embarrassment’ due to lack of physical development and also exclusion from narratives surrounding puberty. Immaturity of the body image can be associated with psychological distress such as embarrassment, anxiety and lack of self-confidence (Higham, 1980). While later maturation is the norm in ballet, those who are

extremely late in maturation may still find themselves separated from their peers and normal social interaction (Higham, 1980).

Perceived asynchrony between physical and mental maturity frustrated some of the dancers, who felt that their lack of development restricted them from feeling like a teenager. These dancers were desperate to be seen as ‘grown up’ and to be considered mature, and they considered their lack of development to be a barrier. This may present a particular frustration for young ballet dancers who are often referred to as ‘boys and girls’ well into their adult lives (Buckroyd, 2000; Fay, 1997). While a lack of physical development is desirable for ballet, young dancers still desire to be physically developed, to an extent, in order to feel able to fulfil normal social expectations and roles related to being a teenager.

Teacher awareness and understanding of growth and maturation was described as important in relation to how dancers experienced the pubertal transition. Understanding and acknowledgment of the challenges dancers were experiencing, relating to their growth, was highlighted as reassuring. For example, demonstrating understanding when dancers lose their flexibility and recognising that this is not the dancer being lazy but a result of growth. There is a lack of research on teacher interaction with adolescent dancers. However, evidence suggests that the teacher-student relationship is an important factor for dance student wellbeing (Stark & Newton, 2014). This supports the need to explore educational interventions with dance teachers to promote greater understanding and consideration of growth and maturation and adaptive environments for the adolescent dancer.

The experiences of dance students in this study suggest that perceived advantages relating to late maturation may only be transient. Greater time to prepare for the onset of puberty means that late maturing adolescent girls have limited or no time to adjust to pubertal changes before embarking on their professional career or further training. Perhaps in the case of the late maturing dancer, what begins as an advantage may later be perceived as a disadvantage.

### ***Strengths and Limitations***

The qualitative methods utilised in this study aimed to develop a greater understanding of psychosocial adaptation to puberty through generating narratives surrounding each participants' experiences of growing up in dance. Narrative accounts are subject to researcher bias and rely on the accuracy of participant recall. It is acknowledged that approaches, such as ethnography, would have enabled these findings to be supplemented by observational data. While this would contribute further richness to the findings, IPA enables the researcher to be an 'outsider' and to bring a more objective perspective to each school environment and each interview (Brocki & Wearden, 2006). Additionally, a purely observational approach would not have enabled the focus on individual lived experiences necessary for an in-depth analysis of how biological, sociocultural and psychological factors interact, relative to differences in pubertal timing (Brocki & Wearden, 2006; Larkin & Griffiths, 2002).

The sample size in this study, while adequate relative to qualitative approaches, is important to note. Sample sizes of 6-10 are recommended for each analysis group to enable rich and in depth data (Smith et al., 2009). However, when drawing conclusions about these findings it is important to acknowledge the relatively small pool of participants who contributed. Further, factors such as country, dance style and age will also impact upon generalisability of the findings. The data collected was restricted to UK dance schools with a ballet focus and therefore may lack generalisability to dance schools in other countries and cultures and to dancers whose focus is not ballet. Moreover, this sample comprised only Caucasian participants, therefore the findings from this work are not generalizable across different ethnicities. More research exploring role of ethnicity is warranted.

This work focuses only on female dance students. The distinct differences in pubertal changes between females and males and subsequent differences in measurement of pubertal

status and timing necessitate consideration of each sex separately. Within the social context of ballet, it is likely that overt changes for females have different social meaning and value compared to pubertal changes for males, and therefore experiences of puberty will likely be very different.

## **Conclusion**

Late maturing dance students appear to be at a natural advantage with a physique that conforms to the expectations of the ballet world. However, while late maturation is preferred in ballet, several facets of the vocational dance training system appear to disadvantage these individuals. The timing of testing and increased intensity of training coincide with a particularly vulnerable period of time for late maturing dancers. Subsequent to experiencing a decline in their performance as many of their peers continue to improve, the late maturing dance students in this study experienced a loss of confidence as they felt left behind. When puberty does occur, they are left with relatively little time to adjust and adapt to these changes compared to their earlier maturing peers. Further to this, late maturing dance students experienced implications related to their social interactions with peers and their identity as a teenager due to lack of physical development and equally, felt anxiety about the unknown outcomes of physical development when it occurred. While there is, in many ways, a natural bias toward later maturation in ballet, it appears that the current training system is not optimal for these individuals in terms of both physical and psychological adaptation and subsequent wellbeing.

Although late maturation is a preferred condition within the social context of ballet training, the current training system increases the intensity of training and evaluates dancers at a point which is not developmentally appropriate for late maturing girls. Consideration of maturity timing within these training systems should encourage moderation of training intensity around

this time and re-evaluation of when testing should occur. While it is acknowledged that there is a short period of time in which to complete vocational training and testing, small considerations regarding maturation may enable a greater retention of the most talented individuals, with a lower risk to psychological and physical wellbeing.

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